

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of:	)	
	)	
Hervé BURGAUD et al.	)	Group Art Unit: 1796
	)	
Application No.: 10/611,968	)	Examiner: Eisa B. ELHILO
	)	
Filed: July 3, 2003	)	Confirmation No.: 3634
	)	
For: DYE COMPOSITION FOR	)	
KERATIN FIBERS CONTAINING	)	
AN ALDEHYDE PRECURSOR,	)	
ENZYME AND HYDRAZONE, AND	)	
METHODS USING THIS	)	
COMPOSITION	)	

**Mail Stop Appeal Brief--Patents**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**REPLY BRIEF UNDER 37 C.F.R. § 41.41**

Pursuant to 37 C.F.R. § 41.41, Appellants present this Reply Brief to the Board of Patent Appeals and Interferences in response to the Examiner's Answer dated November 21, 2007 ("Answer").

**I. Status of the Rejections**

In response to the Appeal Brief filed September 6, 2007 ("Appeal Brief"), the Examiner maintains the rejection of claims 1-6, 9-10, and 12-36 under 35 U.S.C.

§ 103(a) as unpatentable over U.S. Patent Application No. 2002/0059682 ("Hoeffkes") in combination with U.S. Patent No. 3,634,013 ("Benshein"). Additionally, claims 7 and 8 remain objected to as being dependent on a rejected base claim.

## II. Response to Examiner's Arguments in the Answer

As noted above, the Examiner maintains the obviousness rejection raised in the Office Action dated March 22, 2007. Appellants maintain their position that a *prima facie* case of obviousness has not been established for reasons of record and for the additional reasons set forth below.

In order to satisfy the initial burden of establishing a *prima facie* case of obviousness, the Examiner is instructed by the MPEP to make a "clear articulation of the reason(s) why the claimed invention would have been obvious." MPEP § 2141 (rev. 6, Sept. 2007). The Supreme Court, in its recent decision in *KSR Int'l Co. v. Teleflex*, further instructs that the analysis supporting a rejection under 35 U.S.C. § 103 "should be made explicit." 127 S.Ct. at 1741, 82 U.S.P.Q.2d at 1396 (emphasis added) (citing *In re Kahn*, 441 F.3d 977, 988 (Federal Circuit, 2006) ("[R]jections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness")).

In the Answer, the Examiner asserts that "the claimed invention is directed to a dyeing composition that comprises dyeing ingredients taught by the combined references as mentioned above, and not directed to specific chemical reactions that

required [*sic*] specific species of elements to generate or produce specific products.”

Answer at 9. Appellants respectfully point out that arguments based on the dyeing mechanism of the present invention are not made to rebut the presence or absence of the claim elements in the cited references but, rather, are presented for the purposes of rebutting the alleged motivation to combine the references.

Specifically, as Appellants have stated on the record numerous times, the dyeing mechanisms of both *Hoeffkes* and *Benshein* are not only different from that of the present invention, but are also different from each other. Therefore, it is unreasonable to assert that one skilled in the art would have been motivated to combine different elements from *Hoeffkes* and *Benshein* at all, much less to argue that the skilled artisan would have any reasonable expectation of success in arriving at the presently claimed invention upon making such a combination.

In particular, in the dyeing mechanism of the presently claimed invention, an aldehyde precursor, an enzyme able to generate an aldehyde from the aldehyde precursor, and a heteroaromatic hydrazone able to generate a colored substance by reaction with an aldehyde are applied to keratin fibers. The enzyme acts to convert the aldehyde precursor into an aldehyde, and the heteroaromatic hydrazone subsequently reacts with the aldehyde to produce a colored substance on the fibers.

In contrast, *Hoeffkes* is generally directed to a method for dyeing keratin fibers comprising applying to the fibers a composition comprising at least one dye precursor and at least one phenol-oxidizing enzyme. *See abstract. Hoeffkes* utilizes phenol oxidizing enzymes to produce oxygen. The oxygen produced subsequently oxidizes the

dye precursor by oxidative condensation, which results in a dye agent. *Hoeffkes* only briefly mentions ethanol and alcohol oxidase as optional additives, and for purposes wholly disconnected with the production of aldehydes. As such, the mechanism of *Hoeffkes* is completely different than that of the claimed invention.

Furthermore, *Benshein* is generally directed to a process for dyeing human hair comprising applying to the hair a composition comprising a heteroaromatic hydrazone and a coupling agent chosen from hydroxyl and/or amino containing aromatic compounds and compounds with active methylene groups. See col. 1, ll. 41-48. *Benshein* is silent with respect to aldehydes as coupling agents. Thus the mechanism of *Benshein* is completely different than that of the claimed invention. Furthermore, *Benshein* nowhere mentions or suggests phenol-oxidizing enzymes. Thus, the mechanism of *Benshein* is completely different than that of *Hoeffkes*.

Even in view of these three differing dyeing mechanisms, the Examiner maintains his position that the skilled artisan would somehow have been motivated to combine *Hoeffkes* and *Benshein* to arrive at the presently claimed invention. Following the Examiner's logic, the skilled artisan would have had to ignore the fact that *Hoeffkes* and *Benshein* teach completely different dyeing mechanisms and choose to combine the optional components (ethanol and alcohol oxidase) of *Hoeffkes* with the specific heteroaromatic hydrazones of *Benshein*. However, the Examiner has not pointed to any teaching, either in *Hoeffkes* or *Benshein* or in the knowledge generally available to one skilled in the art, that would have led a skilled artisan to make this combination, as required by MPEP § 2141 (rev. 6, Sept. 2007). As such, for at least this reason,

Appellants respectfully submit that the Examiner's position cannot support a proper *prima facie* case of obviousness and the rejection should be reversed.

Moreover, the Examiner appears to take the position that the skilled artisan would have had a reasonable expectation of arriving at the presently claimed invention upon combining *Hoeffkes* and *Benshein*, despite the fact that both references teach dyeing mechanisms which are completely different from that of the presently claimed invention. Appellants assert that, in light of the mechanistic dissimilarity between the cited references and the present invention, as outlined by Appellants herein and in the Appeal Brief, one of ordinary skill in the art would have had no reasonable expectation of success in combining the teachings of *Hoeffkes* and *Benshein* to arrive at the presently claimed invention. Accordingly, for at least this additional reason, Appellants submit that the rejection is legally insufficient and should be reversed.

### **III. Conclusion**

For the reasons set forth above and in Appellants' Appeal Brief, Appellants maintain that a *prima facie* case of obviousness has not been established based on the cited references. The Examiner has failed to demonstrate (1) that one of ordinary skill in the art would have been motivated to make the combination proposed and (2) that one skilled in the art would have a reasonable expectation of success in such a combination. Thus, Appellants respectfully request reversal of the rejection of claims 1-6, 9-10, and 12-36 under 35 U.S.C. § 103(a).

If there are any fees due that are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER, L.L.P.

A handwritten signature in black ink, appearing to be "EC Boughner", written over a horizontal line.

Dated: January 18, 2008

By: \_\_\_\_\_  
Erica C. Boughner  
Reg. No. 60,694